

Claims

What is claimed is:

1. A method for simulating one or more components, comprising:
 - establishing an engineering model of a component;
 - receiving selection data for configuring the component from a user;
 - establishing a web-based model of the component based on the selection data and the engineering model; and
 - performing a simulation of the web-based model.
2. The method of claim 1, wherein performing the simulation of the web-based model includes:
 - performing the simulation of the web-based model in a simulation environment.
3. The method of claim 1, further including:
 - providing, to the user, feedback data reflecting characteristics of the web-based model during the simulation.
4. The method of claim 1, wherein receiving selection data includes:
 - providing an option to the user reflecting a sub-component that may be associated with the component, wherein the selection data includes the sub component selected by the user.
5. The method of claim 4, wherein providing an option further includes:

providing, to the user, a web-based model of the sub-component based on a corresponding engineering model of the sub-component.

6. The method of claim 5, wherein the web-based model of the sub-component is a 3D image of the sub-component that may be manipulated by the user.

7. The method of claim 1, wherein establishing a web-based model of the component includes:

detecting a change to the engineering model of the component;
and

updating the web-based model of the component based on the detected change.

8. The method of claim 1, wherein establishing a web-based model of the component includes:

lightening the engineering model; and
establishing the web-based model based on the lightened engineering model.

9. The method of claim 1, wherein the web-based model is a 3D image model.

10. The method of claim 1, wherein the web-based model includes a 3D image model of the component and textual data associated with at least one of physical, functional, and marketing characteristics of the component.

11. The method of claim 1, wherein performing a simulation of the web-based model includes:

providing, to the user, one or more options reflecting various simulation environments that the web-based model may be simulated within; receiving a selection from the user reflecting a selected simulation environment; and performing a simulation of the web-based model in the selected simulation environment.

12. The method of claim 1, wherein performing a simulation of the web-based model includes:

allowing the user to control the operation of the web-based model using an input interface; and

performing simulations of the web-based model in the simulation environment based on data received from the input interface.

13. The method of claim 2, wherein the simulation environment includes a simulated load and wherein performing a simulation of the web-based model includes simulating a manipulation of the simulated load by the web-based model.

14. The method of claim 13, further including:

providing, to the user, feedback data reflecting at least one of physical and functional characteristics of the web-based model based on the simulated manipulation.

15. The method of claim 2, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model,

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and wherein performing a simulation of the web-based model includes simulating operation of the web-based model in the simulated work environment.

16. The method of claim 15, further including:

providing, to the user, feedback data reflecting at least one of physical and functional effects of the web-based model based on the simulated operation in the simulated work environment.

17. The method of claim 1, wherein the simulation

environment includes a simulated surface and wherein performing a simulation of the web-based model includes simulating operation of the web-based model on the simulated surface.

18. The method of claim 17, further including:

providing, to the user, feedback data reflecting at least one of physical and functional characteristics of the web-based model based on the simulated operation.

19. The method of claim 2, wherein the simulation

environment includes a type of work environment and a work operation to be performed by the web-based model in the work environment.

20. The method of claim 19, wherein performing the

simulation of the web-based model includes:

establishing a plurality of duplicate web-based models of the component; and

simulating the work operation in the work environment using the duplicate web-based models.

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21. The method of claim 20, further including:
providing, to the user, feedback data reflecting characteristics of
the duplicate web-based models during the simulated work operation.

22. The method of claim 20, further including:
providing, to the user, feedback data reflecting performance
information associated with the work operation in the work environment.

23. The method of claim 20, wherein simulating the work
operation in the work environment further includes:

allowing the user to adjust the number of duplicate web-based
models performing the work operation and to adjust the configuration of the
duplicate web-based models.

24. The method of claim 2, wherein the simulation
environment is a virtual repair environment.

25. The method of claim 24, wherein performing simulations
of the web-based model includes:

allowing the user to perform a virtual repair of the web-based
model in the virtual repair environment.

26. The method of claim 2, wherein the simulation
environment is a virtual training environment and performing simulations of the
web-based model includes providing instructional information to the user while
the user operates the web-based model in the virtual training environment,
wherein the instructional information may include at least one of image, voice,
and textual information instructing the user on the operation of the web-based
model.

27. A system for simulating one or more components, comprising:

a client system operated by a user; and

a server system, including:

a process for receiving configuration data from the client system reflecting a configuration of a component selected by the user;

a process for establishing a web-based model of the component based on the configuration data and an engineering model of the component;

a process for providing, to the client system, a simulation of the web-based model; and

a processor for executing the processes for receiving, creating, and providing.

28. The system of claim 27, wherein the process for providing includes a process for providing, to the client system, feedback data reflecting characteristics of the web-based model during the simulation.

29. The system of claim 27, wherein the process for establishing a web-based model of the component includes:

a process for detecting a change to the engineering model of the component; and

a process updating the web-based model of the component based on the detected change.

30. The system of claim 27, wherein the process for establishing a web-based model of the component includes:

a process for lightening the engineering model; and

a process for establishing the web-based model based on the lightened engineering model.

31. The system of claim 24, wherein the process for providing a simulation of the web-based model includes:

a process for providing, to the client system, one or more options reflecting various simulation environments that the web-based model may be simulated within;

a process for receiving a selection from the client system reflecting a simulation environment selected by the user; and

a process for performing a simulation of the web-based model in the selected simulation environment.

32. The system of claim 31, wherein the process for providing a simulation of the web-based model includes:

a process for receiving input data from the client system; and

a process for manipulating the web-based model in the selected simulation environment based on the input data.

33. The system of claim 27, wherein the process for performing a simulation of the web-based model includes a process for simulating operation of the web-based model in a simulation environment, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model and wherein the process for performing a simulation of the web-based model includes a process for simulating operation of the web-based model in a simulated work environment.

34. The system of claim 33, further including:

a process for providing feedback data reflecting at least one of physical and functional characteristics of the web-based model during the simulating operation.

35. The system of claim 27, wherein the process for providing the simulation of the web-based model includes:

a process for establishing a plurality of duplicate web-based models of the component; and

a process for simulating a selected work operation in the selected simulation environment using the duplicate web-based models.

36. The system of claim 35, further including:

a process for providing feedback data reflecting characteristics of the duplicate web-based models during the simulated work operation.

37. The system of claim 27, wherein the process for providing a simulation of the web-based model includes a process for simulating a virtual repair of the web-based model in a simulation environment.

38. A computer-readable medium including instructions for performing a method, when executed by a processor, for simulating one or more components, the method comprising:

establishing an engineering model of a component;

receiving selection data for configuring the component from a user;

establishing a web-based model of the component based on the selection data and the engineering model; and

performing a simulation of the web-based model.

39. The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes:
performing a simulation of the web-based model in a simulation environment.

40. The computer-readable medium of claim 38, further including:
providing, to the user, feedback data reflecting characteristics of the web-based model during the simulation.

41. The computer-readable medium of claim 38, wherein establishing a web-based model of the component includes:
detecting a change to the engineering model of the component;
and
updating the web-based model of the component based on the detected change.

42. The computer-readable medium of claim 38, wherein establishing a web-based model of the component includes:
lightening the engineering model; and
establishing the web-based model based on the lightened engineering model.

43. The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes:
providing, to the client system, one or more options reflecting various simulation environments that the web-based model may be simulated within;

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receiving a selection from the client system reflecting a simulation environment selected by the user; and

performing a simulation of the web-based model in the selected simulation environment.

44. The computer-readable medium of claim 43, wherein performing a simulation of the web-based model includes:

receiving input data from the client system; and

manipulating the web-based model in the selected simulation environment based on the input data.

45. The computer-readable medium of claim 39, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model and wherein performing a simulation of the web-based model includes simulating operation of the web-based model in the simulated work environment.

46. The computer-readable medium of claim 45, further including:

providing, to the user, feedback data reflecting at least one of physical and functional effects of the web-based model based on the simulated operation in the simulated work environment

47. The computer-readable medium of claim 38, wherein performing the simulation of the web-based model includes:

establishing a plurality of duplicate web-based models of the component; and

simulating a selected work operation in the selected simulation environment using the duplicate web-based models.

48. The computer-readable medium of claim 47, further including:

providing, to the user, feedback data reflecting characteristics of the duplicate web-based models during the simulated work operation.

49. The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes simulating a virtual repair of the web-based model in a simulation environment.

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